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INFORMATION-GIVING IN MEDICAL CONSULTATIONS: THE INFLUENCE OF PATIENTS' COMMUNICATIVE STYLES AND PERSONAL CHARACTERISTICS

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Abstract—Informing the patient is arguably the physician's most important communicative responsibility. Recognizing this researchers have long been interested in the question of why some patients receive more information from physicians than do others. In this paper, it is argued that the amount of information physicians provide patients during medical consultations may be influenced by two sets of factors, patients' personal characteristics (age, sex, education, and anxiety) and patients' communicative styles (question-asking, opinion-giving, and expression of concern). The analysis of audiovisual recordings of 41 physician–patient consultations in a family practice clinic revealed several notable findings: (a) information regarding diagnosis and health matters was primarily related to the patient's anxiety, education, and question-asking, (b) information regarding treatment was primarily a function of the patient's question-asking and expression of concerns, and (c) patients' assertiveness and expressiveness were strongly influenced by physicians' use of 'partnership-building' utterances that solicited the patient's questions, concerns, and opinions. The data suggest that, when attempting to explicate factors affecting physicians' informativeness, researchers must take into account features of the patients' communicative styles as well as physicians' perceptions of certain groups of patients.

Key words—physician–patient communication, medical interview, information-giving, patients' characteristics

INTRODUCTION

In spite of sophisticated technologies for medical diagnosis and treatment, talk remains the primary means by which the physician and patient exchange health information. The significance of information-sharing in the medical consultation is readily apparent. For the doctor, information is crucial for formulating diagnoses and prescribing treatment; for the patient, information fosters an understanding of one's health status which in turn may reduce uncertainty, alleviate concerns, and improve health [1, 2]. Unfortunately, the exchange of information between the patient and physician is often fraught with problems. Although expecting doctors to be informative [3, 4], patients often perceive them as insufficiently so [5, 6], which in turn contributes to the patient's dissatisfaction, non-compliance, and misunderstanding of medical information [7, 8].

Additionally, physicians tend to overestimate the amount of information they give patients, underestimate the patient's desire for information, and give varying amounts of information in response to the patient's education, income, sex, and age [2]. Because of the critical role that information plays in health care delivery, the purpose of this investigation was to examine factors potentially affecting the physician's informativeness and to account for differences in the amount of information given to various groups of patients.

Information-giving in medical consultations

One of the most pervasive findings in the literature on physician–patient communication is that physicians are more informative with some patients than with others. For example, patients who are upper middle-class, more seriously ill, more educated, and middle-aged generally receive more information from doctors than do their counterparts [2, 9]. Regarding sex, the data are equivocal. Feminist scholars argue that doctors are less informative with female patients than they are with males [10, 11], whereas others have found the opposite to be true [2, 12]. Other researchers have reported that physicians' informativeness may vary depending on the specific topic being discussed. For example, Arntson and Philipsborn [13] observed that the higher the income and educational level of parents, the less frequently pediatricians discussed symptoms and the more frequently they discussed medication and professional treatment. Stewart [14] discovered that physicians were more likely to justify their choice of treatment to patients with university educations than they were to the less educated.

How can one account for such systematic differences in physicians' information-giving? One possibility is that these differences are related to the *patient's communicative style*. Patients who are more assertive, express more concerns, and ask more questions conceivably acquire more information from doctors than do less verbally active patients. Hence, more educated, higher income, older, and female (or male) patients may receive more information because they have communicative styles that elicit this information from doctors. However, another perspective suggests that differences in physicians' information-giving are related to *physicians' attitudes toward patients*. For example, doctors may vary the amount

of information given to patients because of their impressions of a particular patient (e.g. likeable, intelligent) or because of their subjective judgments about the patient's informational needs and requirements [15].

In an effort to unravel the intricacies of these relationships, one objective of this investigation was to examine the degree to which physicians' information-giving was *uniquely* related (a) to specific features of patients' verbal styles such as question-asking, opinion-giving, and affective expressiveness and (b) to patients' personal characteristics such as age, sex, education, and anxiety.

The influence of the patient's communicative style

One the one hand, one could argue that patients have little control over the communicative content and structure of the medical consultation. In most instances, the physician is clearly the more dominant interactant who initiates most of the topics of the consultation [10], talks for longer durations [16], and interrupts the patient more than the reverse [11]. On the other hand, conversation, even that within the medical consultation, is an enterprise that is *mutually* constructed by the interactants. How a physician interacts with a patient is in part a function of how the doctor chooses to communicate and in part a function of what the patient allows the doctor to do. Hence, because conversational exchanges require coordination for topic development and turn-taking, patients potentially have the verbal resources to exert considerable control over the physician's behavior. In particular, three features of the patient's communicative style appear capable of influencing the doctor's informativeness—asking questions, expressing concerns and worries, and offering opinions.

Question-asking. There are at least two reasons to explain why a patient's question will elicit an informative response from the doctor. First, given that both parties typically share the goal of helping and educating the patient [15, 17], one would expect that doctors will usually answer the patient's queries about diagnosis, treatment, health, and other matters. Secondly, one rule of conversation is that a partner's utterance should be topically connected and fulfil obligations raised in the prior speaker's utterance [18]. For example, answers are expected to follow questions, an acceptance is expected to follow an offer, requests should be accepted or rejected, etc. Thus, although they may experience frustration with patients who ask numerous questions [19] and may be uncomfortable or unwilling to answer some questions [11], physicians may feel obligated to provide at least some information in response to the patient's query. Several studies indeed have revealed that physicians provide more information to patients who ask more as opposed to fewer questions [20–23].

Affective expressiveness and opinion-giving. For the purposes of this study, affective expressions refer to utterances that express concerns, worries, or emotions. Opinion-giving, on the other hand, represents the patient's efforts to assert his or her perspective into the consultation by offering opinions about diagnosis and treatment, disagreeing with the doctor, making recommendations, and so forth. A patient's expressiveness and assertiveness may influence the doctor's informativeness in two respects. First, once again assuming that the goal of both parties is to help the patient, the doctor may be inclined to respond informatively to the patient's concerns or opinions in order to reassure the patient, to alleviate the patient's uncertainty, or to offer an opinion or evidence that supports, rejects, or clarifies the patient's perspective on an issue. Secondly, by expressing emotions, concerns, and opinions, the patient is providing a topical context for the doctor's subsequent utterance. An extension of the patient's utterance may present information in the form of opinion, data, explanation, and description. In support of this proposition, Greenfield *et al.* [22] recently observed that (a) doctors were more interpersonally engaged with and provided more opinions to patients who were more rather than less affectively expressive and (b) patients attempting to exert some control over the physician's behavior (through questions and opinions) elicited more information from physicians than did less verbally assertive patients.

The influence of the patient's personal characteristics

Physicians also modify their responses in relation to their perceptions of and attitudes toward patients' personal characteristics. In an experimental investigation using simulated patients, Gerbert [24] reported that, even when symptoms were presented similarly across all groups of patients, doctors gave more information to patients they liked as opposed to disliked and to patients perceived to be lacking understanding than to more knowledgeable patients. Pendleton and Bochner [9] observed that physicians in their study volunteered more explanations to more educated patients even when the explanation was not explicitly requested by the patient. Finally, Cartwright [25] and Waitzkin [2] have suggested that doctors may be less informative with less educated and lower income patients because they inaccurately assume that these patients are not particularly interested in learning about health.

This investigation examines whether physicians vary the amount of information given to patients in response to the patient's education, age, sex, and anxiety. The first three of these attributes are likely to discriminate among physicians' informativeness given previous research [2, 9, 26]. The relationship between doctors' information-giving and the patient's anxiety has received much less empirical attention. To the extent that worried patients may verbally and nonverbally signal their anxiety [27], the patient's anxiety may influence the physician's informativeness.

Hypotheses

In sum, the amount of information physicians give patients may be influenced by (a) features of patients' communicative styles, (b) physicians' communicative adaptations to patients with varying personal and social attributes, or (c) some combination of the two. Previous research on this topic has rarely attempted to examine both sets of variables within the same study. This is potentially problematic given that two very different phenomena, patient's communicative behavior and doctors' perceptions of different types of patients, may yield the same result. To the extent

that patients' characteristics and communicative styles may be correlated with one another (an issue discussed later), a study focusing on only one set of variables, say the patient's personal characteristics, may produce data of questionable validity because it is confounded by another set of variables, namely the patient's communicative style. Thus, two hypotheses are forwarded.

H1: *Controlling for the effects of patients' personal characteristics, the amount of information physicians give patients will be significantly related to the frequency with which patients ask questions, offer opinions, and express worries, concerns, and emotions.*

H2: *Controlling for the effects of patients' communicative styles, the amount of information physicians give patients will be significantly related to the patient's education, age, sex, and anxiety about their health condition.*

If the physician's informativeness is influenced by the patient's verbal style, then an additional question should be addressed: How can one account for differences in patients' communicative behavior? On the one hand, patients who are more educated, middle-aged, wealthier, and more seriously-ill may be more socially, culturally, or psychologically predisposed to communicate in a way to elicit medical information from doctors. For example, relative to less educated patients, more educated patients tend to disclose more information to physicians [28] as well as ask more questions during the consultation [29]. Beisecker and Beisecker [3] reported a positive correlation between age and the frequency with which patients asked questions and initiated topics.

On the other hand, patients may differ in expressiveness and assertiveness because of the extent to which the physician verbally 'invites' them to do so by explicitly soliciting the patient's questions, concerns, and opinions. Hall *et al.* [7] have labeled such acts "partnership-building" to reflect the physician's willingness to allow the patient greater control over the topics of the consultation and over the decisions reached. A study by Cox [30] showed that the practitioner's use of such utterances indeed facilitated the degree to which patients expressed feelings. Thus, a third hypothesis is examined:

H3: *The frequency with which patients ask questions, offer opinions, and express concerns will be related to the patients' personal characteristics (education, age, sex, and anxiety) and to the frequency with which physicians utilize partnership-building utterances.*

METHODOLOGY

Research participants

Patients participating in this study were solicited from a family practice clinic at a teaching hospital in the southwestern United States. During a 6-week period, 48 English-speaking patients were approached in the waiting area prior to seeing their physician. Patients were told that the researchers were conducting a study that involved recording doctors' interactions with patients and that the purpose of the research was to examine how doctors and patients communicate with one another. Of the 48 patients approached, 41 agreed to participate in the project. Of the 41, 21 were female and 20 were male. Twenty-three were white, 8 were black, 6 were Hispanic, and 4 were Asian-American. The average age of the patients was 38 years with the youngest being 17 and the oldest 72 years of age.

Ten physicians, second and third year residents in family practice, volunteered for the study. All were between the ages of 28–35 and all but one were male. In this study, 7 of the 10 doctors participated in four consultations each, whereas 2 saw five patients and 1 saw three.

Procedures

The medical examination rooms were equipped with a ceiling-mounted camera in one corner of the room and a small microphone attached to the ceiling. The video monitor and recording unit were located in a separate room. Taping began when the patient entered the room and was terminated when the patient exited. The average duration each physician–patient pair actually interacted with one another was 16 min with the shortest being 9 min and the longest 36 min. After the conclusion of the consultation, the patient was escorted to a private room where he or she completed a brief response form.

Patient's characteristics

The postexamination response form asked for demographic information and contained the patient's anxiety measure. Anxiety about the condition was assessed by three questions asking (on a scale of 1–5), before seeing the doctor, how serious did the patient perceive his or her medical condition to be, how worried was the patient, and how minor–major did the patient perceive his or her condition to be. Alpha reliability for this scale was 0.76.

Verbal behavior coding

Five verbal behaviors (2 for the doctor, 3 for the patient) were coded. The *physicians' information-giving* consisted of statements by physicians that imparted information to the patient. The information may be in the form of fact, opinion, lab results, description, rationale, or explanation and may serve functions such as informing, educating, persuading, instructing, and counseling. Because some researchers [13, 14] have discovered that the differences in physicians' informativeness may vary as a function of the type of information exchanged, these utterances were classified further into three subcategories of information: diagnostic-health, treatment, and procedural. The *diagnostic-health* category contained comments related to the diagnosis (e.g. "you have strep throat"), patient's health status (e.g. "your blood pressure looks real good"), or health information in general (e.g. "Cholesterol is bad for the body because . . ."). The *treatment* category included comments related to past, current, or proposed treatments and recommendations including drug therapy, life style, surgical procedures, laboratory work, follow-up appointments, and so forth. Finally, the

procedural category included uterances that described examination procedures (e.g. "when I check your prostate, you may feel the urge to urinate but you won't") and administrative matters (e.g. "To see if you qualify for the sliding-fee scale, you'll need to go to . . .").

Based on the work of Hall *et al.* [7], the *physician's partnership-building* included utterances that solicited or encouraged the patient to express questions, opinions, feelings, and concerns. This category also included statements that explicitly agreed with the patient's opinion or recommendation. The *patient's opinion-giving* represented utterances in which the patient made recommendations or offered an opinion regarding diagnosis, treatment, administrative or other health-related matters. The *patient's affective expressions* included utterances that expressed emotions, worries, or concerns. Finally, the *patient's question-asking* consisted of any question the patient directed to the physician.

The unit of analysis for these behaviors was the 'utterance' which could be in the form of a complete sentence, independent clause, non-restrictive dependent clause, multiple predicate, evaluation or term of address [24, 31]. For the purposes of this investigation, a relatively liberal definition of 'information-giving' utterance was adopted. For example, in some coding schemes [31], the comment "this medication might make you feel nauseous and a bit sleepy" would be coded as one utterance because it has only one verb. However, this statement clearly presents two units of information (that is, 'feeling nauseous' and 'feeling sleepy'). Thus, in this study, unitizing for utterances focused on linguistic 'ideas' (e.g. statements, questions, directives) [32] and on 'units' of information [2].

Two coders participated in 3 two-hour training sessions. All coding was conducted by having the coder listen to the video-tape of the consultation while simultaneously following a transcript of the consulation. Reliability for coding procedures was computed by having each coder recode five transcripts previously coded by the other. Unitizing reliability for utterances was acceptable (Cohen's kappa = 0.84). Interrater agreement for categorizing was also adequate: 0.82 for physician's information giving, 0.87 for physician's partnership-building, 0.82 for patient's opinion-giving, 0.75 for patient's affective expressiveness, and 0.96 for patient's question-asking.

Data analysis

Partial correlations (pr) were used to test the hypotheses of this study. Partial correlation coefficients are derived from ordinary regression procedures and, when squared (pr^2), reflect the proportion of dependent variable variance that is related to a particular predictor variable independent of the other predictor variables in the model [33, p. 102]. Hence, these coefficients represent the 'unique' contribution of that particular variable to the dependent measure controlling for the other independent variables. For example, if patients' question-asking reveals a significant partial correlation with physicians' information-giving, then one can conclude that there is variation in information-giving that is uniquely related to question-asking and that is independent of other predictor variables such as the patient's education or affective expressiveness.

RESULTS

Table 1 presents the means and standard deviations for the variables studied in this investigation. What is particularly noticeable about these data is the relative infrequency with which doctors and patients exhibited many of the communicative behaviors of interest. On average, an individual patient produced only 4.8 questions, 6.7 expressions of affect, and 7.5 opinions (4.1, 5.3, and 6.4% of the patient's utterances respectively). On average, doctors provided 53.4 informative statements (39.3% of the physicians' utterances) and only 3.4 partnership-building utterances (2.3% of the doctors' utterances) per consultation. The frequencies and percentages for the physicians' and patients' utterances are quite consistent with the distributions observed in other studies [34] and indicate that patients typically ask few questions and offer few opinions during medical consultations and that physicians rarely solicit the patient's concerns, opinions, and questions [23, 34, 35].

The patient's characteristics variables were not correlated with one another although there was a trend for more anxious patients to be less educated ($r = -0.28$, $P < 0.08$). Hence, as predictor variables, the patients' characteristics can be considered relatively independent of one another. However, the patient's communicative behaviors were correlated to some degree: question-asking with opinion-giving ($r = 0.41$, $P < 0.01$) and opinion-giving with affective expressions ($r = 0.33$, $P < 0.05$). Finally, there were trends for physicians to exhibit more partnership-building with older patients ($r = 0.29$, $P < 0.08$), females ($r = 0.27$, $P < 0.09$), and anxious patients ($r = 0.28$, $P < 0.09$).

Physicians' information-giving

Table 2 presents the partial correlations between physicians' information-giving and the patients' characteristics and communicative behaviors.

Information-giving in general. The general regression model, which included the four patients' characteristics variables and the three patients' communicative behavior variables as predictors, accounted for 53.3% of the variance in the total amount of information physicians gave patients ($F = 5.37$,

Table 1. Means and standard deviations for physicians' and patients' utterances

Type of utterance	Mean	Standard deviation	Range	
			Minimum	Maximum
Physicians'				
Information-giving	53.41	33.38	9	163
Diagnosis-health	23.92	17.97	3	93
Treatment	16.71	16.20	0	69
Procedural	12.78	12.05	0	67
Partnership-building	3.49	3.54	0	14
Patient's				
Questions	4.88	6.63	0	33
Affective expressions	6.75	7.77	0	31
Opinions	7.55	9.09	0	38

Table 2. Partial correlations between physicians' information-giving and patients' characteristics and communicative behaviors

Predictor variables	Type of information: Information in general	Diagnostic-health	Treatment	Procedural
Patients' communication				
Question-asking	0.45**	0.33**	0.58***	−0.07
Affective expression	0.32**	0.18	0.28*	0.19
Opinion-giving	0.15	−0.04	0.24	0.11
Patient characteristics				
Education	0.17	0.38**	0.01	−0.16
Age	−0.30*	−0.28*	−0.16	−0.13
Sex[a]	0.08	0.07	0.07	0.01
Anxiety	0.41**	0.36**	0.10	0.34**

[a]For this variable, male = 0 and female = 1.
*$P < 0.1$; **$P < 0.05$; ***$P < 0.001$.

$df = 7,33$, $P < 0.001$). Regarding patients' communicative styles, doctors' informativeness was uniquely and strongly related to the frequency with which patients asked questions ($pr = 0.45$, $P < 0.01$) and with the degree to which patients expressed concerns ($pr = 0.32$, $P < 0.05$). Of the patients' characteristics, only anxiety uniquely explained a significant amount of variation in physicians' information-giving as more anxious patients received more information than did less worried patients ($pr = 0.41$, $P < 0.01$). However, there was a modest trend for younger patients to receive more information than older patients ($pr = -0.30$, $P < 0.07$) (see Table 2).

Diagnostic-health information. The regression model that included all the predictor variables accounted for 40.2% of the variance in the information physicians provided on diagnostic and health matters ($F = 3.18$, $df = 7,33$, $P < 0.02$). Controlling for the other variables, the only behavior uniquely predictive of the degree to which doctors provided diagnostic and health information was the patient's question-asking; patients who asked more questions received more information ($pr = 0.33$, $P < 0.05$). On the other hand, several of the patients' personal characteristics were related to physicians' informativeness on these topics. More educated ($pr = 0.38$, $P < 0.05$), more anxious ($pr = 0.36$, $P < 0.03$), and (to some extent) younger ($pr = -0.28$, $P < 0.09$) patients tended to receive more information than did their counterparts.

Treatment. The general regression model explained 55.7% of the variance regarding the degree to which doctors informed patients on treatment matters ($F = 5.93$, $df = 7,33$, $P < 0.001$). The patient's communicative style was the only set of variables uniquely accounting for significant variation in physicians' information-giving on treatment. Patients who asked more questions ($pr = 0.58$, $P < 0.001$) and who expressed more concerns ($pr = 0.28$, $P < 0.09$) received more information than did patients asking fewer questions and expressing fewer concerns.

Procedural. The patients' personal characteristics and communicative behaviors accounted for only 20.4% of the variance in the degree to which physicians informed patients on examination and administrative procedures ($F = 1.21$, $df = 7,33$, NS). Of the 7 variables, only the patients' anxiety was uniquely predictive of the physicians' informativeness on these topics as more anxious patients received more information ($pr = 0.34$, $P < 0.05$).

Patients' communicative styles

The third hypothesis examined the extent to which differences in the patient's communicative behavior were related to the patients' personal characteristics *per se* and to the physicians' use of 'partnership-building' utterances that directly solicited the patient's questions, concerns, and opinions or that expressed agreement with the patient. The results of these analyses are presented in Table 3.

Interestingly, the frequency with which patient's asked questions was not predicted by any of the variables. However, patients' affective expressiveness was strongly related to physicians' use of partnership-building utterances ($pr = 0.73$, $P < 0.001$) and to the patient's education ($pr = 0.32$, $P < 0.05$). More expressive patients received more partnership-building utterances and tended to be more educated. More opinionated patients were more educated ($pr = 0.46$, $P < 0.01$), older ($pr = 0.37$, $P < 0.05$), male ($pr = -0.36$, $P < 0.05$), and received more partnership-building utterances from physicians ($pr = 0.50$, $P < 0.01$).

DISCUSSION

This study represented an attempt to account for systematic differences in physicians' informativeness that often are related to the patient's age, sex, education, and anxiety. Although many investigators have examined this topic, few have attempted to unravel the communicative processes by which these differences emerge. In this study, two possibilities were suggested. On the one hand, the physician's

Table 3. Partial correlations among patients' communicative behaviors, patients' personal characteristics, and physicians' partnership-building

Predictor variables	Dimensions of patients' communicative styles: Question-asking	Affective expressions	Opinion-giving
Patient characteristics			
Education	0.05	0.32**	0.46**
Age	0.21	0.08	0.37**
Sex[a]	−0.02	0.24	−0.36**
Anxiety	0.20	−0.15	0.02
Physicians'			
Partnership-building	0.02	0.73***	0.50***

[a]For this variable, male = 0 and female = 1.
*$P < 0.1$; **$P < 0.05$; ***$P < 0.001$.

informativeness may be strongly influenced by features of the patient's communicative style such as question-asking, opinion-giving, and affective expressiveness. On the other hand, physicians may provide varying amounts of information strictly in response to the personal and social attributes of patients. The results of this investigation indicated that *both* phenomena are present within the medical consultation.

Key findings

Information-giving and the patient's communicative style. These findings suggest that, through their communicative styles, patients can exert considerable control of the amount of information they receive from doctors. In particular, the frequency with which patients *asked questions* was strongly related to the degree to which doctors provided medical information in general and diagnostic and treatment information in particular. These findings emerged even though, on average, patients asked very few questions (4.8 per consultation). The normative expectation that questions raised by one interactant should be answered by a partner appears to be a powerful conversational rule that has considerable influence even within the medical consultation [20–23].

Consistent with the findings of Greenfield *et al.* [22], the extent to which patients *expressed concerns, worries, and emotions* also was associated with the amount of information received from doctors. Specifically, more expressive patients received more information in general and (to some extent) more information regarding treatment. Thus, there is some indication that, when patients raise issues of personal import, physicians often provide information in subsequent utterances. To the extent that questions are asked infrequently and concerns are rarely expressed, patients appear to underutilize verbal resources that can effectively elicit more informative responses from physicians.

Information-giving and the patient's personal characteristics. Controlling for the influence of patients' communicative styles, there was also evidence revealing that physicians gave more information to particular types of patients than to others regardless of the patient's communicative behavior. Interestingly, the doctors' informativeness varied most in relation to the *patient's anxiety* as more worried patients received more information in general and more diagnostic and procedural information in particular than did less anxious patients. Physicians may have given more information to anxious patients because these individuals had more serious (and thus more complicated) conditions that required more discussion [2] or because physicians recognized that these patients were worried and in need of reassurance or information to reduce their uncertainty and apprehension.

In addition, more educated and younger patients received more diagnostic information than did their counterparts. With the exception of the patient's age, these data are relatively consistent with those of Waitzkin [2, 29] and Pendleton and Bochner [9]. Many physicians may *assume* that more educated patients appreciate or understand diagnostic and health information more than do less educated patients, a possibility previously suggested by Cartwright [27] and Waitzkin [2]. In addition, less educated patients were less inclined to express concerns, communicative acts that tended to elicit more information from doctors. Hence, less educated patients may be *doubly disadvantaged* because of their passive communicative styles and because of doctors' misperceptions of their informational needs and desires.

Differences in patients' communicative styles. Given the possibility that the patient's behavior influences the physician's informativeness, another objective of this research was to identify factors related to differences in patients' communicative styles. In this study, patients indeed varied considerably in their communication during the consultation. Consistent with the findings of other researchers [25, 36], more educated patients were more opinionated and more affectively expressive than were less educated patients. Bochner [36] has argued that, relative to less educated patients, more educated patients are more communicatively active because they are less 'culturally distant' from the doctor and thus experience fewer difficulties when interacting with physicians. Thus, less educated patients may not only be culturally disinclined to freely express opinions and feelings [29] but also may perceive constraints and barriers to doing so. Finally, older patients and males were more opinionated than younger patients and females, findings comparable to those of Stewart [14] and Beisecker and Beisecker [3].

There was also strong evidence indicating that the patients' verbal responsiveness was influenced by physicians' partnership-building behaviors. Specifically, positive relationships were observed between the degree to which patients expressed concerns and opinions and doctors' statements that agreed with the patient and that solicited the patient's questions, opinions, and feelings. This finding emerged even though physicians rarely exhibited partnership-building remarks (2% of the doctor's utterances). Because most patients accept the communicative dominance of the doctor, many patients may be relatively passive during the consultation and wait for specific cues (e.g. "Do you have any questions?") to express themselves. When the invitation comes forth, even if infrequently, it is a highly salient speech act that the patient interprets as an opportunity to respond more openly on issues of personal import.

Implications for communication research

The results of this study raise several issues for future research on physician–patient communication. First, when examining factors influencing the physician's communicative behavior, researchers must be cautious about singularly focusing on a particular set of variables, such as the patient's personal characteristics, without taking into account other variables, such as the patient's communication, which might be correlated with and thus confound the variables of interest. For example, in this study, physicians provided more diagnostic and health information to college educated patients in part because these patients were more affectively expressive than were less educated patients. In fact, one of the limitations of this study is that another important variable, the physician's characteristics, was not examined. For

example, relative to more domineering doctors, some physicians may provide more information to patients *generally* because they have 'patient-centered' interviewing styles [37] or have more favorable attitudes toward informing patients [2]. With larger samples of physicians and patients, researchers can examine the additive and interactive influences of multiple variables that potentially influence the physicians' informativeness.

Secondly, another objective for future research is not only to identify what differences exist but also how these patterns of information-giving are accomplished communicatively. For example, did some patients receive more information because physicians 'volunteered' information to them [9] or because doctors offered more information in response to their questions and concerns? Insight into this and related questions could be gained by using micro-analytic methods such as conversational analysis [10, 11] or by utilizing statistical procedures, such as time series regression [16] and lag sequential analysis [38], that are designed to ascertain specific linkages among communicators' responses.

Finally, in addition to the quantitative characteristics of informative messages, researchers also should examine *qualitative* dimensions of informativeness. For example, although the patient's question-asking and emotional expressiveness were related to physicians' informativeness, these behaviors do not ensure that the informative process was a 'happy' one. Doctors may provide 'information' in response to a patient's query, yet the statement may be qualitatively 'uninformative' because it either glosses over issues of import to the patient [10], is presented in a form (e.g. as jargon) that is not understandable [39], or is simply redundant with what the patient already knows [15]. One strategy for studying this issue is to have judges or the patients themselves review the consultation with the researcher and rate the value of the information provided.

Implications for physicians

This investigation also has implications for the participants of the medical consultation. The informative process might be improved if physicians (and patients) take note of the following: (a) physicians are relatively poor judges of the patient's informational needs and concerns [2] and (b) patients often do not communicate in a way to garner or share information of interest. The problems caused by these two conditions could be mitigated if patients would simply ask questions and express concerns. However, given the physician's social standing and expertise, many patients are reluctant to ask questions for fear of being perceived as ignorant or as wasting the doctor's time. Hence, physicians should consider using partnership-building behaviors more frequently. Utterances such as "Do you have any other concerns?", "How do you feel about ...", "You seem hesitant about ...", and mirror responses are verbal acts which encourage patients to be more expressive. In turn, a verbally expressive patient often is more likely to provide information relevant to the doctor's goals of accurate diagnosis and appropriate remediation [40] and to be more adherent, satisfied, and even healthier than a non-expressive patient [41]. Although physicians may perceive the use of partnership-building as 'time-consuming', there is evidence to the contrary. Frankel and Beckman [42] have observed that encouraging (or allowing) patients to express their concerns early in the consultation usually does not contribute significantly to the length of the consultation and that these patients are less likely to interject concerns at the conclusion of the consultation.

In sum, considerable support for the hypotheses was found. The results of this study suggest that the amount of information physicians give patients is strongly influenced by patients' communicative styles and by patients' personal characteristics. Hopefully researchers will continue to examine physician–patient communication using perspectives that attempt to address the processes by which the topical content of medical consultations is mutually created by the physician and patient as each negotiates their goals and situational expectations around the constraints imposed by the communicative choices of the other.

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